Home Smart (Apartment) Home

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My House, My Personal Assistant

These days, an automated home does not simply control lighting. It’s butter, security guard, and party planner, setting the water temperature for your morning shower, phoning you if there’s a leak in the apartment, creating a romantic mood for you to come home to — and ordering ice cream if things don’t work out.

3 A.M. Restaurant deliveryman turns out to be an attractive struggling artist. Using control panel by front door, hit preset command for romance.

2 A.M. You are alone in bed, depressed, after new romance and longtime boyfriend have stormed out. Using universal remote, access Internet on bedroom TV screen and order two desserts from nearby restaurant.

10 P.M. Settle into apartment with dinner companion, until longtime boyfriend arrives unexpectedly. Hit “abort” button, bringing up lights, lowering temperature, shutting off music and turning TV to History Channel.

9 P.M. Halfway through dinner with a business acquaintance, sparks fly. Use app on iPhone to set up a romantic scene in your apartment: temperature is turned up, the electric fireplace is turned on, lights are dimmed and romantic music plays.

11 A.M. While at the office, receive an alert on your iPhone that there has been a leak in your radiator, which is now flooding the floor. Doorman and super have been alerted simultaneously. Using app on phone, unlock the apartment for building handyman.

2:30 A.M. Wake up because house is too hot. Shut off radiator using universal remote control without leaving bed.

3:30 A.M. Wake up again because you have to go to the bathroom. Motion detector and motion-sensitive lights illuminate your way to bathroom, where lights are programmed to 40 percent of their normal strength so you are not blinded. Lights shut off after you are back in bed.

3:45 A.M. Unable to sleep, cue up movie using universal remote, hooking up to Netflix. Avoid hiding TV in bedroom or up to reveal screen.

7:30 A.M. Alarm on TV screen wakes you up. Simultaneously, lights go on, blinds go up, coffee starts brewing, preferred radio station turns on in bedroom and bathroom. Five minutes later, bathroom shower begins running, at preset temperature. Later, using the touch screen in the bathroom, turn on flat-panel TV mounted in medicine cabinet mirror and watch CNN as you put on makeup.

8 A.M. Barcode reader installed near garbage can scans empty milk carton and adds milk to your shopping list.
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AMLI RESIDENTIAL
AMLI Smart Home direction

- Return on investment: ROI is the largest driving force when determining our spend on technologies deployed in the apartment units.
- Evaluating partners: We look to partner with companies that can provide smart home technology packages to the resident.
- Cost reduction: Look for technologies that can also tie into our LEED initiatives and conserve energy in vacant units.
- Deploy simple cost effective solutions such as smart thermostats.
- Avoid risk: Do not invest heavily in a hard set technology that has a good chance of being superseded quickly. Resident assumes the risk of using devices connected to the internet.
AMLI Uptown

- Purchased from a third party developer in August 2013
- Located in the Uptown district of Houston
- Community was wired for integrated Smart Home technologies on the 1st and 5th floors.
- Technology package includes:
  - Smart Thermostats
  - Controlled lighting
  - Controlled speakers
  - Smart TV (some units)
AMLI Uptown - Marketing

• Integrated into the sales process
• Promoted on community web page
• Smart Home units are amenitized $100 higher than non-Smart Home units
• Both Smart Home and non-Smart Home units are 95% leased
AMLI Uptown- Support

• Instruction Manuals provided to residents
• Third Party provides technical support
• Very few complaints or issues with the devices
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FOREST CITY
The Continental Energy Study

Project Overview: Forest City has a great opportunity to implement proven technologies through innovative solutions that will enhance the resident experience for those living in the Continental Apartment Complex. Magnum Energy Solutions (MES) is proud to have been engaged to provide a proposal to provide value driven intelligent automation technologies meant to reduce energy usage and the overall carbon footprint. Furthermore, this wireless solution can be quickly installed, which significantly reduces installation costs. In addition to the potential energy savings, the recommended solution from MES will offer benefits to the facilities and maintenance staff that oversee the property in Dallas, Texas.
PROPOSED CONTROL STRATEGY
Coming Home/Leaving Home Wireless and Battery-less Control Switch

HVAC
LCD 24 Volt Thermostat for Bi-Directional wireless communication

PLUG LOAD CONTROL
Power Strip: Occupancy Based

ENTRY DOOR CONTROL
Wireless Door Sensor

LIGHTING CONTROL
Integrated Light Switches
Solution Benefits for the Property Manager.

- Reduce unit energy and utility consumption and costs.
- Achieving LEED status
- Market “green” apartment living
- Reduce run times of HVAC systems lowering maintenance / replacement costs.
- Virtually no maintenance of the system.
- Little disruption during installation.
- Cost effective energy management system.
- Control vacant utility costs.
Solution Benefits for the Resident.

- 25%-40% energy savings.
- Intelligent apartment living.
- Mobile device connectivity and control.
- Customizable scheduling for all devices in your home.
- Web portal and mobile application.
- Hub of the home.
Why Magnum Energy Solutions?

- System Cost & Value.
- Scalability.
- Simple integration to existing BAS.
- Enhancing the residents experience through innovative technology.
- Little disruption during installation.
- Flexibility to add efficiency to common areas.
- LEED points - Innovation.
- Enhance Forest City brand through “green” initiatives and technology.
Device Overview: 1 Bedroom & 1 Bath

Products

1. Thermostat
   - Returns to preset temperature when room is unoccupied.

2. Light Control
   - Real value dimming allows management to control energy use and costs.

3. Power Strip
   - Control plug loads in unoccupied rooms.

4. Coming / Leaving Switch
   - Controlled devices are activated or deactivated base on switch position.

5. Access Point
   - Wireless LAN Access Point with ethernet interface.

6. Window / Door Sensor
   - Determines window status and sets HVAC into energy savings mode.
Device Overview: 2 Bedroom & 2 Bath

**Products**

1. **Thermostat**
   - Returns to preset temperature when room is unoccupied.

2. **Light Control**
   - Real value dimming allows management to control energy use and costs.

3. **Power Strip**
   - Control plug loads in unoccupied rooms.

4. **Coming / Leaving Switch**
   - Controlled devices are activated or deactivated based on switch position.

5. **Access Point**
   - Wireless LAN Access Point with ethernet interface.

6. **Window / Door Sensor**
   - Determines window status and sets HVAC into energy savings mode.
Full Building EMS Infrastructure.

MES’ eBox is an EnOcean to BACnet IP gateway that seamlessly allows the property to integrate MES’ in-room devices with the Tridium Building Automation system. The eBox is connected to the property’s data network at the DSL location. From the eBox, via the Ethernet Infrastructure using BACnet IP into the Tridium BAS, all communication is bi-directional.
Forest City: The Continental Energy Savings Estimator

<table>
<thead>
<tr>
<th>Property Information</th>
<th>Magnum Control System</th>
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<tbody>
<tr>
<td>Number Of Rooms</td>
<td>203</td>
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<tr>
<td>Cost Per Room (Components) Average</td>
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<tr>
<td>Average Energy Cost Per Room Per Year</td>
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<tr>
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<td>Estimated Annual Savings (Typical Average)*</td>
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<td>ROI Timeframe (Months)</td>
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</tbody>
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Meet root™.
The World’s Most Intelligent Thermostat.
Thermostat Control Page.
- Delivery Alerts
- Weather Alerts
- Tenant Notifications
- Energy Usage Reports
- Transportation Schedules
- Video Memos
- Security
Home Automation Solution.
Remotely Control, Configure, and Monitor.
- Full Thermostat Control
- Custom Scheduling
- Weather Reports & Alerts
- Calendar Syncing Options
- Sync to Energy Management Devices
- Social Networking

- Security System Integration
- Live Stream Music
- 7” Capacitive Touch Screen
- Mobile & Ethernet Connectivity
- Lighting Control
- Advertising

- Wifi & Bluetooth
- Alarm Clock
- Energy Consumption Charts
- News & Alert Notifications
- Built-in Access Point
- Video Messaging
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DISCUSSION